

ABSTRACT OF THE DISCLOSURE

A method of manufacturing a MOS transistor is provided. A substrate having a gate structure thereon is provided. A first spacer is formed on the sidewall of the gate structure. A pre-amorphization implantation is carried out to amorphize a portion of the substrate. A doped source/drain extension region is formed in the substrate on each side of the first spacer. A second spacer is formed on the sidewall of the first spacer. A doped source/drain region is formed in the substrate on each side of the second spacer and then a pre-annealing operation is performed. Thereafter, a solid phase epitaxial process is carried out to re-crystallize the amorphized portion of the substrate and activate the doped source/drain extension region and the doped source/drain region to form a source/drain terminal. Finally, a post-annealing operation is performed.